

SUBSTITUTE SHEET

SEQUENCE LISTING

<110> ARUMUGHAM, RASAPPA G.
PRASAD, A. KRISHNA

<120> IMMUNOGENIC PEPTIDE CARRIER CONJUGATES AND METHODS OF PRODUCING
SAME

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<151> 2003-12-17

<160> 55

<170> PatentIn version 3.5

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<211> 6

<212> PRT

<213> Homo sapiens

<400> 1

Asp Ala Glu Phe Arg Cys

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<210> 2

<211> 8

<212> PRT

<213> Homo sapiens

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1 5

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<211> 10

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<400> 3

Asp Ala Glu Phe Arg His Asp Ser Gly Cys

1 5 10

<210> 4

<211> 13

<212> PRT

<213> Homo sapiens

<400> 4

Asp Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val Cys

1 5 10

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 Asp Ala Glu Phe Arg Gly Ala Gly Ala Cys
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 Asp Ala Glu Phe Arg His Asp Gly Ala Gly Ala Cys
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<210> 7
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 Asp Ala Glu Phe Arg His Asp Ser Gly Gly Ala Gly Ala Cys
 1 5 10

<210> 8
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 Asp Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val Gly Ala Gly Ala
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Cys

<210> 9
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 Val Glu Tyr Gly Ser Asp His Arg Phe Glu Ala Asp Cys
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<400> 10
Gly Ala Gly Ala
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<400> 11
Pro Lys Tyr Val Lys Gln Asn Thr Leu Lys Leu Ala Thr
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Ala Lys Xaa Val Ala Ala Trp Thr Leu Lys Ala Ala Ala
1 5 10

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<211> 16
<212> PRT
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<400> 13
Glu Lys Lys Ile Ala Lys Met Glu Lys Ala Ser Ser Val Phe Asn Val
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<210> 14
<211> 10
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<213> Homo sapiens

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Phe Glu Leu Leu Thr Arg Ile Leu Thr Ile
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<210> 15
<211> 19
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<213> Homo sapiens

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Asp Gln Ser Ile Gly Asp Leu Ile Ala Glu Ala Met Asp Lys Val Gly
1 5 10 15

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Asn Glu Gly

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<400> 16
 Gln Val His Phe Gln Pro Leu Pro Pro Ala Val Val Lys Leu
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<210> 17
 <211> 15
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 Gln Tyr Ile Lys Ala Asn Ser Lys Phe Ile Gly Ile Thr Glu Leu
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Ala Ser His Leu Glu
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<210> 19
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 <212> PRT
 <213> Homo sapiens

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 Lys Gln Ile Ile Asn Met Trp Gln Glu Val Gly Lys Ala Met Tyr
 1 5 10 15

<210> 20
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 Asp Ala Glu Phe Arg His Asp Gln Tyr Ile Lys Ala Asn Ser Lys Phe
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Ile Gly Ile Thr Glu Leu Cys Phe Asn Asn Phe Thr Val Ser Phe Trp
 20 25 30

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Leu Arg Val Pro Lys Val Ser Ala Ser His Leu Glu Asp Ala Glu Phe
 35 40 45

Arg His Asp
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<210> 21
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<400> 21
 Asp Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys
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Leu Val Phe Phe Ala Glu Asp Val Gly Ser Asn Lys Gly Ala Ile Ile
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Gly Leu Met Val Gly Gly Val Val Ile Ala
 35 40

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 Asp Ala Glu Phe Arg His Asp Gln Tyr Ile Lys Ala Asn Ser Lys Phe
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Ile Gly Ile Thr Glu Leu
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<210> 23
 <211> 28
 <212> PRT
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Leu Arg Val Pro Lys Val Ser Ala Ser His Leu Glu
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<210> 24
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 <213> Homo sapiens

<400> 24

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Asp Ala Glu Phe Arg His Asp Gln Tyr Ile Lys Ala Asn Ser Lys Phe
1 5 10 15

Ile Gly Ile Thr Glu Leu Phe Asn Asn Phe Thr Val Ser Phe Trp Leu
20 25 30

Arg Val Pro Lys Val Ser Ala Ser His Leu Glu
35 40

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<212> PRT
<213> Homo sapiens

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Glu Phe Arg His Asp Ser Gly Gln Tyr Ile Lys Ala Asn Ser Lys Phe
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Ile Gly Ile Thr Glu Leu
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<223> Any amino acid

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1 5 10 15

Phe Arg His Asp
20

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<222> (24)..(24)
<223> Any amino acid

<400> 27
Asp Ala Glu Phe Arg His Asp Asp Ala Glu Phe Arg His Asp Asp Ala
1 5 10 15

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Glu Phe Arg His Asp Ala Lys Xaa Val Ala Ala Trp Thr Leu Lys Ala
 20 25 30

Ala Ala

<210> 28
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Phe Arg His Asp Asp Ala Glu Phe Arg His Asp Asp Ala Glu Phe Arg
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His Asp

<210> 29
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<220>
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 <222> (10)..(10)
 <223> Any amino acid

<400> 29
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Lys Ala Ala Ala
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<210> 30
 <211> 24
 <212> PRT
 <213> Homo sapiens

<400> 30
 Asp Ala Glu Phe Arg His Asp Ile Ser Gln Ala Val His Ala Ala His
 1 5 10 15

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Ala Glu Ile Asn Glu Ala Gly Arg
20

<210> 31
<211> 24
<212> PRT
<213> Homo sapiens

<400> 31
Phe Arg His Asp Ser Gly Tyr Ile Ser Gln Ala Val His Ala Ala His
1 5 10 15

Ala Glu Ile Asn Glu Ala Gly Arg
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<210> 32
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<212> PRT
<213> Homo sapiens

<400> 32
Glu Phe Arg His Asp Ser Gly Ile Ser Gln Ala Val His Ala Ala His
1 5 10 15

Ala Glu Ile Asn Glu Ala Gly Arg
20

<210> 33
<211> 34
<212> PRT
<213> Homo sapiens

<400> 33
Pro Lys Tyr Val Lys Gln Asn Thr Leu Lys Leu Ala Thr Asp Ala Glu
1 5 10 15

Phe Arg His Asp Asp Ala Glu Phe Arg His Asp Asp Ala Glu Phe Arg
20 25 30

His Asp

<210> 34
<211> 27
<212> PRT
<213> Homo sapiens

<400> 34
Asp Ala Glu Phe Arg His Asp Pro Lys Tyr Val Lys Gln Asn Thr Leu
1 5 10 15

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Lys Leu Ala Thr Asp Ala Glu Phe Arg His Asp
20 25

<210> 35
<211> 34
<212> PRT
<213> Homo sapiens

<400> 35
Asp Ala Glu Phe Arg His Asp Asp Ala Glu Phe Arg His Asp Asp Ala
1 5 10 15

Glu Phe Arg His Asp Pro Lys Tyr Val Lys Gln Asn Thr Leu Lys Leu
20 25 30

Ala Thr

<210> 36
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<212> PRT
<213> Homo sapiens

<400> 36
Asp Ala Glu Phe Arg His Asp Asp Ala Glu Phe Arg His Asp Pro Lys
1 5 10 15

Tyr Val Lys Gln Asn Thr Leu Lys Leu Ala Thr
20 25

<210> 37
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<212> PRT
<213> Homo sapiens

<400> 37
Asp Ala Glu Phe Arg His Asp Pro Lys Tyr Val Lys Gln Asn Thr Leu
1 5 10 15

Lys Leu Ala Thr Glu Lys Lys Ile Ala Lys Met Glu Lys Ala Ser Ser
20 25 30

Val Phe Asn Val Gln Tyr Ile Lys Ala Asn Ser Lys Phe Ile Gly Ile
35 40 45

Thr Glu Leu Phe Asn Asn Phe Thr Val Ser Phe Trp Leu Arg Val Pro
50 55 60

Lys Val Ser Ala Ser His Leu Glu Asp Ala Glu Phe Arg His Asp
65 70 75

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<210> 38
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 <213> Homo sapiens

<400> 38
 Asp Ala Glu Phe Arg His Asp Asp Ala Glu Phe Arg His Asp Asp Ala
 1 5 10 15

Glu Phe Arg His Asp Gln Tyr Ile Lys Ala Asn Ser Lys Phe Ile Gly
 20 25 30

Ile Thr Glu Leu Cys Phe Asn Asn Phe Thr Val Ser Phe Trp Leu Arg
 35 40 45

Val Pro Lys Val Ser Ala Ser His Leu Glu
 50 55

<210> 39
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 <213> Homo sapiens

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 Asp Ala Glu Phe Arg His Asp Gln Tyr Ile Lys Ala Asn Ser Lys Phe
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Ile Gly Ile Thr Glu Leu Cys Phe Asn Asn Phe Thr Val Ser Phe Trp
 20 25 30

Leu Arg Val Pro Lys Val Ser Ala Ser His Leu Glu
 35 40

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 <213> Homo sapiens

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 Gly Ala Asp Asp Val Val Asp Ser Ser Lys Ser Phe Val Met Glu Asn
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Phe Ser Ser Tyr His Gly Thr Lys Pro Gly Tyr Val Asp Ser Ile Gln
 20 25 30

Lys Gly Ile Gln Lys Pro Lys Ser Gly Thr Gln Gly Asn Tyr Asp Asp
 35 40 45

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Asp Trp Lys Glu Phe Tyr Ser Thr Asp Asn Lys Tyr Asp Ala Ala Gly
 50 55 60
 Tyr Ser Val Asp Asn Glu Asn Pro Leu Ser Gly Lys Ala Gly Gly Val
 65 70 75 80
 Val Lys Val Thr Tyr Pro Gly Leu Thr Lys Val Leu Ala Leu Lys Val
 85 90 95
 Asp Asn Ala Glu Thr Ile Lys Lys Glu Leu Gly Leu Ser Leu Thr Glu
 100 105 110
 Pro Leu Met Glu Gln Val Gly Thr Glu Glu Phe Ile Lys Arg Phe Gly
 115 120 125
 Asp Gly Ala Ser Arg Val Val Leu Ser Leu Pro Phe Ala Glu Gly Ser
 130 135 140
 Ser Ser Val Glu Tyr Ile Asn Asn Trp Glu Gln Ala Lys Ala Leu Ser
 145 150 155 160
 Val Glu Leu Glu Ile Asn Phe Glu Thr Arg Gly Lys Arg Gly Gln Asp
 165 170 175
 Ala Met Tyr Glu Tyr Met Ala Gln Ala Cys Ala Gly Asn Arg Val Arg
 180 185 190
 Arg Ser Val Gly Ser Ser Leu Ser Cys Ile Asn Leu Asp Trp Asp Val
 195 200 205
 Ile Arg Asp Lys Thr Lys Thr Lys Ile Glu Ser Leu Lys Glu His Gly
 210 215 220
 Pro Ile Lys Asn Lys Met Ser Glu Ser Pro Asn Lys Thr Val Ser Glu
 225 230 235 240
 Glu Lys Ala Lys Gln Tyr Leu Glu Glu Phe His Gln Thr Ala Leu Glu
 245 250 255
 His Pro Glu Leu Ser Glu Leu Lys Thr Val Thr Gly Thr Asn Pro Val
 260 265 270
 Phe Ala Gly Ala Asn Tyr Ala Ala Trp Ala Val Asn Val Ala Gln Val
 275 280 285

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Ile Asp Ser Glu Thr Ala Asp Asn Leu Glu Lys Thr Thr Ala Ala Leu
290 295 300

Ser Ile Leu Pro Gly Ile Gly Ser Val Met Gly Ile Ala Asp Gly Ala
305 310 315 320

Val His His Asn Thr Glu Glu Ile Val Ala Gln Ser Ile Ala Leu Ser
325 330 335

Ser Leu Met Val Ala Gln Ala Ile Pro Leu Val Gly Glu Leu Val Asp
340 345 350

Ile Gly Phe Ala Ala Tyr Asn Phe Val Glu Ser Ile Ile Asn Leu Phe
355 360 365

Gln Val Val His Asn Ser Tyr Asn Arg Pro Ala Tyr Ser Pro Gly His
370 375 380

Lys Thr Gln Pro Phe Leu His Asp Gly Tyr Ala Val Ser Trp Asn Thr
385 390 395 400

Val Glu Asp Ser Ile Ile Arg Thr Gly Phe Gln Gly Glu Ser Gly His
405 410 415

Asp Ile Lys Ile Thr Ala Glu Asn Thr Pro Leu Pro Ile Ala Gly Val
420 425 430

Leu Leu Pro Thr Ile Pro Gly Lys Leu Asp Val Asn Lys Ser Lys Thr
435 440 445

His Ile Ser Val Asn Gly Arg Lys Ile Arg Met Arg Cys Arg Ala Ile
450 455 460

Asp Gly Asp Val Thr Phe Cys Arg Pro Lys Ser Pro Val Tyr Val Gly
465 470 475 480

Asn Gly Val His Ala Asn Leu His Val Ala Phe His Arg Ser Ser Ser
485 490 495

Glu Lys Ile His Ser Asn Glu Ile Ser Ser Asp Ser Ile Gly Val Leu
500 505 510

Gly Tyr Gln Lys Thr Val Asp His Thr Lys Val Asn Ser Lys Leu Ser
515 520 525

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Leu Phe Phe Glu Ile Lys Ser
530 535

<210> 41
<211> 17
<212> PRT
<213> Homo sapiens

<400> 41
Ile Ser Gln Ala Val His Ala Ala His Ala Glu Ile Asn Glu Ala Gly
1 5 10 15

Arg

<210> 42
<211> 42
<212> PRT
<213> Mus musculus

<400> 42
Asp Ala Glu Phe Gly His Asp Ser Gly Phe Glu Val Arg His Gln Lys
1 5 10 15

Leu Val Phe Phe Ala Glu Asp Val Gly Ser Asn Lys Gly Ala Ile Ile
20 25 30

Gly Leu Met Val Gly Gly Val Val Ile Ala
35 40

<210> 43
<211> 9
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<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic A-beta 18-25 + C
peptide

<400> 43
Val Phe Phe Ala Glu Asp Val Gly Cys
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<210> 44
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
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Leu Val Phe Phe Ala Glu Asp Val Cys
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SUBSTITUTE SHEET

<210> 45
 <211> 9
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 <213> Artificial Sequence

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 Lys Leu Val Phe Phe Ala Glu Asp Cys
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<210> 46
 <211> 9
 <212> PRT
 <213> Artificial Sequence

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 Cys Val Phe Phe Ala Glu Asp Val Gly
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<210> 47
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 <212> PRT
 <213> Artificial Sequence

<220>
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<400> 47
 Cys Leu Val Phe Phe Ala Glu Asp Val
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<210> 48
 <211> 9
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<220>
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<210> 49
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Val Phe Phe Ala Glu Asp Val Cys

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<210> 50

<211> 8

<212> PRT

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<210> 51

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

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Lys Leu Val Phe Phe Ala Glu Cys

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<210> 52

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<220>

<223> N-term CRM 197

<400> 52

Cys Val Phe Phe Ala Glu Asp Val

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<210> 53

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 53

Cys Leu Val Phe Phe Ala Glu Asp

1 5

SUBSTITUTE SHEET

<210> 54
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<220>
<223> N-term CRM 197

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Cys Lys Leu Val Phe Phe Ala Glu
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<210> 55
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<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

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